

Application No.: 10/713,657

6

Docket No.: 245402007800

**REMARKS**

Claims 1-18 were pending in the present application. By virtue of this response, claim 1 has been amended. Accordingly, claims 1-18 are currently under consideration. Amendment and cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented. Support for the amended claims can be found on page 7, lines 13-18 of the current application. No new matter has been added.

**Rejections under 35 U.S.C. 103(a)**

Claims 1, 6, 8-10, and 14 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over as admitted prior art in view of U.S. Publication No. 2004/0159848 (the Yamaguchi et al. reference).

With respect to claim 1, the device described in the Yamaguchi et al. reference is different from the device as described in Fig. 12 in the background section of the current application. Thus one of ordinary skill in the art would not combine elements from the device disclosed in the Yamaguchi et al. reference with the device described in Fig. 12 in the background section of the current application. The device disclosed in the Yamaguchi et al. reference does not have a saturable absorption layer in contact with a layer having an index of refraction greater than the index of refraction of the second clad layer. Further the Yamaguchi et al. reference does not teach or suggest a saturable light absorption layer in contact with a layer having an index of refraction greater than the second clad layer, which can be used to "increase light intensity in the saturable absorption region" (page 5, lines 3-5), as recited in the current application.

In fact, saturation is not possible in the device disclosed in the Yamaguchi reference. The light absorption layer 44 of the Yamaguchi reference is in contact with insulating layer 40. Carriers generated by the absorption layer would be consumed at the energy levels in the interface between the insulating layer 40 and light absorption layer 44. As a result, accumulation of carriers, which is a requirement for saturation, would not occur. Accordingly, the device resulting from the combination of the elements 40 and 42 in Fig. 9A of the Yamaguchi reference with Fig. 12 in the background

pa-1029915

Application No.: 10/713,657

7

Docket No.: 245402007800

section of the current application, would not have a saturable absorption layer or would not otherwise possess all of the features specified for a device as recited in claim 1.

As a result, the combination of Fig. 12, with elements 40 and 44 of Fig. 9A, in the Yamaguchi reference, would not produce a device having all the features specified in claim 1, and thus would not render claim 1 obvious under 35 U.S.C. 103(a).

In addition, the Yamaguchi reference does not disclose that the index of refraction of the material on which the saturable absorption layer is formed must be greater than the second clad layer. The Yamaguchi et al. reference only requires this layer to be an insulating layer. The index of refraction of the insulating layer could be higher or lower than the index of refraction of the second cladding layer. The Yamaguchi et al. reference teaches that amorphous silicon layer 44 works as a light absorbing layer, and can serve to increase the effective refractive index difference  $\Delta n$  in a lateral direction (paragraph [0185]). However,  $\Delta n$  can be increased in many ways, and the Yamaguchi et al. reference does not indicate that  $n$  of the insulating layer 40 is necessarily greater than the  $n$  of the second clad layer. Accordingly, the Yamaguchi et al. reference fails to disclose that the refractive index of the material, on which the light absorbing region is formed, is greater than the refractive index of the second clad layer as disclosed in currently amended claim 1. Thus the combination of Fig. 12 of the current application and the Yamaguchi et al. reference fails to teach all of the elements of the currently amended claim 1.

In light of the above argument the rejection of claim 1 under 35 U.S.C. 103(a) should be withdrawn.

The rejection of claims 6, 8-10, and 14 should be withdrawn for at least the reason that they depend from an allowable base claim.

Claim 2 is rejected under 35 U.S.C. 103(a) as admitted prior art in view of Yamaguchi et al. and further in view of Kan et al. (6,002,701).

pa-1029915

Application No.: 10/713,657

8

Docket No.: 245402007800

Claim 2 depends from base claim 1. Neither the Yamaguchi reference nor the Kan reference teach or suggest a saturable absorption layer in contact with a layer having an index of refraction greater than the index of refraction of the second clad layer as recited in base claim 1, as discussed above. Thus, the rejection of claim 2 should be withdrawn for at least the reason that it depends from an allowable base claim.

Claims 3-5, 7 and 11 are rejected under 35 U.S.C. 103(a) as admitted prior art in view of Yamaguchi et al. and further in view of U.S. Patent No. 5,949,809 (the Ashida reference).

Claims 3-5, 7 and 11 depend from base claim 1. Neither the Yamaguchi reference nor the Ashida reference teach or suggest a saturable absorption layer in contact with a layer having an index of refraction greater than the index of refraction of the second clad layer as recited in base claim 1, as discussed above. Thus, the rejection of claims 3-5, 7 and 11 should be withdrawn for at least the reason that they depend from an allowable base claim.

Claims 15-16 are rejected under 35 U.S.C. 103(a) as admitted prior art in view of Yamaguchi et al. and further in view of JP2000357842.

Claims 15-16 depend from base claim 1. Neither the Yamaguchi reference nor the JP2000357842 reference teach or suggest a saturable absorption layer in contact with a layer having an index of refraction greater than the index of refraction of the second clad layer as recited in base claim 1, as discussed above. Thus, the rejection of claims 15-16 should be withdrawn for at least the reason that they depend from an allowable base claim.

Claims 17-18 are rejected under 35 U.S.C. 103(a) as admitted prior art in view of Yamaguchi et al. and further in view of U.S. Patent No. 6,865,202 (the Matsumoto reference).

Claims 17-18 depend from base claim 1. Neither the Yamaguchi reference nor the Matsumoto reference teach or suggest a saturable absorption layer in contact with a layer having an index of refraction greater than the index of refraction of the second clad layer as recited in base

pa-1029915

Application No.: 10/713,657

9

Docket No.: 245402007800

claim 1, as discussed above. Thus, the rejection of claims 17-18 should be withdrawn for at least the reason that they depend from an allowable base claim.

**Allowable Subject Matter**

The Examiner objected to claims 12 and 13 as being dependent upon a rejected base claim. Claims 12-13 depend from base claim 1. Neither the Yamaguchi reference nor the Kan reference teach or suggest a saturable absorption layer in contact with a layer having an index of refraction greater than the index of refraction of the second clad layer as recited in base claim 1, as discussed above. Thus, claims 12 and 13 depend from an allowable base claim and should be allowed.

pa-1029915

Application No.: 10/713,657

10

Docket No.: 245402007800

**CONCLUSION**

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 245402007800. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: December 27, 2005

Respectfully submitted,

By 

Ilya Chorny

Registration No.: 56,519

MORRISON &amp; FOERSTER LLP

755 Page Mill Road

Palo Alto, California 94304-1018

(650) 813-5932

pa-1029915